

GYPSY MOTH FACT:



Male Gypsy Moths can inseminate several females, multiple mating by females is less common than in males.²

ANOTHER LIBRARY

The AIPM Field Office in Elkins is in the process of establishing a library of information concerning Dimilin (diflubenzuron). The library will contain an extensive listing of literature on Dimilin as well as copies of scientific studies, research data and fact sheets. The listings will be made available by means of an information retrieval system. Attempts are being made to put the information on the Forest Service Data General Computer System to facilitate effortless dissemination. The project will be completed and the library ready for use around the middle of September. Although the listings will be updated, some of the more obscure documents may prove to be too elusive. Therefore, to make the holdings of the library more complete, any contribution in the form of a bibliography or copies of documents you feel could have been missed would be greatly appreciated. Further details will appear in a future issue of the Demonstration News.

Please direct any questions and/or requests to:

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Karl Hilbert

AIPM AIDS IN CHARACTERIZATION TRIAL

Existing swath width guidelines for aircraft used during cooperative gypsy moth suppression projects were established prior to many advances in spray technology and therefore need to be updated. In a cooperative effort, the Animal & Plant Health Inspection Service (APHIS), the Forest Service and the Pennsylvania Bureau of Forestry conducted characterization trials in Gettysburg, Pennsylvania. These trials, which took place the week of June 10, were to provide such updated characterization information for selected rotary-wing aircraft.

AIPM personnel traveling to Gettysburg to help with the trial were DICK REARDON, JOHN NOBLES and AMY CREIGHTON.



AIPM's AMY CREIGHTON times aircraft speed with a radar gun. Aircraft speed is a critical component of the characterization trial.

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EDITOR'S NOTE

Last issue we asked you to watch for an article on the new gypsy moth library in Morgantown. The article is written but we are holding it until next month due to lack of space. Watch for it then



WHAT ARE THESE PEOPLE DOING?

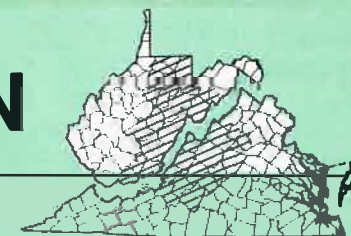
No, it's not a picnic being held in the warehouse of the Morgantown Lab. From left to right are EUGENE TUZADER, PHIL WARGO, RAY SLUSWSKI, JOHN FLESHER (back to camera), MARK TWERY, RICHARD GLINSKI, and BILL STAWERS. Hint: They're looking for something as part of larger overall study. Anyone guessing what they are looking for, what the project is, and how it relates to AIPM wins a free one day trip to Cooper's Rock State Forest (transportation not included). The answers will be in a future Demonstration Project News article.

²The Gypsy Moth: Research Toward Integrated Pest Management; Technical Bulletin 1584; 1981 P. 12



APPALACHIAN GYPSY MOTH
INTEGRATED PEST MANAGEMENT

DEMONSTRATION PROJECT NEWS



TERRY FREY - EDITOR VOLUME 2, ISSUE 8 AUGUST 1989



MATING DISRUPTION IN GILES COUNTY

What was AIPM doing on a ridgetop near Mountain Lake Resort (west of Blacksburg, Virginia) the week of July 17 thru 21? AIPM was observing a 2550 acre application of HERCON DISRUPT II, for the purpose of mating disruption. The technique takes advantage of the fact that gypsy moths use their sense of smell to find each other for mating purposes.

DISRUPT II is a synthetic version of the sex pheromone released by gypsy moth females to attract mates. The theory is that the synthetic version will produce the same scent as a gypsy moth female making it very difficult for a male to find and mate her.



VIKKI SMITH of the Blacksburg Ranger District counts Hercon Flakes on a tarpaper strip after the spray plane has passed. This was one of the primary methods of determining flake dispersal.

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AIPM DATES:

Oct. 31 - Nov. 1, 1989
Joint Planning Steering Committee Meeting, Morgantown.
Nov. 6 - 9, 1989
National Gypsy Moth Review.
Annapolis, Maryland.

DEFOLIATION PRESS TOUR

It's easy to get gypsy moth publicity AFTER defoliation strikes a community or area. The public and the press become very interested in a hurry, particularly when residential areas are hit. Unfortunately, it is very difficult to channel this reactionary



TERRY FREY describes gypsy moth feeding patterns to reporters KATHY PLUM of the Dominion Post and STEVEN ROSA of the Preston County Journal, as AIPM's SUSAN DELOST looks on. This was the reporters' first close look at the gypsy moth.

publicity into meaningful public input toward a course of action. By the time the public gets interested it is usually

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MATING DISRUPTION . . . continued from page 1

If the method prevents mating, next year's population will be significantly reduced, or as is the goal of this project, eradicated in that area. The adults die after a few days whether they mate or not. In 1983, the Virginia Department of Agriculture and Consumer Services (VDACS) conducted a 4,000 acre mating disruption project in Floyd County, Virginia. This was a follow up to two years of insecticide treatment of an isolated infestation. Since the treatment, there have been no gypsy moths trapped in that area.

GYPSY MOTH FACT:



Gypsy moth adult females live about a week after emerging from the pupal case, but their timespan for reproduction is much shorter than a week. By the third day after emergence the attractiveness of females is greatly diminished, perhaps because the pheromone supply is exhausted.¹

In the Giles County Project the synthetic pheromone was dispersed in flake form from a USDA Animal & Plant Health Inspection Service (APHIS) airplane. Each flake is about 1/32 inches long by 3/32 inches wide. The goal was for 4 or 5 flakes to land on each square foot of land area.

The Giles County location was selected to test this method because it currently supports a low-level gypsy moth population, which is isolated outside of the generally infested gypsy moth zone. Also, it is the site of a multi-year study by researchers at the University of Virginia Biological Research Station. This study is focused

on the dark-eyed junco, a bird that feeds on caterpillars. While traditional gypsy moth suppression methods would not harm the juncos themselves, their food sources could be reduced by eliminating most caterpillars, causing the juncos to move to another area, and thus interrupting the study.

The gypsy moth population is quite low in the treatment area, with less than three male moths caught per trap and only two viable egg masses in the entire area which includes 18,300 adjacent infested acres outside the junco study. The adjacent 18,300 acres were treated with either *Bacillus thuringiensis* (Bt), the bacterial insecticide, or the chemical growth regulator diflubenzuron.

The project was a cooperative effort among the USDA Forest Service - Region 8 Forest Pest Management (R8-FPM); the Appalachian Gypsy Moth Integrated Pest Management Project (AIPM); the Jefferson National Forest (JNF); VDACS and APHIS. The states of Pennsylvania and North Carolina as well as the Environmental Action Foundation sent observers to study the project.

Participants from AIPM included DICK REARDON, AMY CREIGHTON, JOHN NOBLES, and TERRY FREY.

JIM PIERCE of the AIPM planning committee and the Environmental Action Foundation, who was on hand to observe the project said "The Environmental Community is very excited about this technique and would like to see its use expanded as an alternative to chemical insecticides."

JOHN GHENT of R8-FPM and CHERYL PARKER of VDACS shared overall responsibility for the project, while DONNA LEONARD also of R8-FPM oversaw much of the monitoring activities. Monitoring will include grid trapping on a 500 by 500 meter grid and deployment of sterile, lab-reared female moths. Monitoring will be conducted in the treatment area and in a control area to the north.



DONNA LEONARD of R8-FPM inspects leaves for flake disposition from a bucket truck as JIMMY WATERS, R8-FPM videographer records the action on video tape. DONNA is studying how many flakes land on the leaves and will also record how long they

If no male moths are caught in the traps this will indicate that the pheromone has been successful in confusing them so they are unable to find the traps or, presumably, female moths. The lab-reared females, which will be tethered so that they cannot escape, will be collected along with any eggs they lay. The eggs will be tested in the laboratory for viability. If the tests indicate that the females were not mated, it will be further indication of the success of the treatment. Egg mass surveys will also be conducted in both the treatment and control areas.

Donna Leonard is also conducting extensive studies to determine flake deposition in the forest. Donna will be studying the rate of deposition on foliage, on the ground in open fields, and on the forest floor under the canopy. Measurements will continue all summer to determine how long the flakes stay on the foliage before falling to the forest floor.

Although outside of the AIPM area, the Giles County project is critical to AIPM because it involves an isolated infestation which, left unchecked, could seriously hinder AIPM objectives. It also offers the opportunity to evaluate the pheromone flake technique for possible use within the AIPM areas.

Terry Frey

¹The Gypsy Moth: Research Toward Integrated Pest Management; Technical Bulletin 1584; 1981 P. 12

DEFOLIATION PRESS TOUR . . . continued from page 1

too late to carry out intervention activities, at least for that year.

This has been a problem inherent to gypsy moth management as long as public agencies have tried to deal with the pest.

One of our goals in AIPM Public Involvement is to stimulate public interest in the gypsy moth, BEFORE it



This Garrett County homeowner really gave us an earful on what it was like to experience defoliation. She is holding her own mechanical control device.

reaches outbreak mode¹. An aware public will be better able to provide us with meaningful input as we prepare site specific assessments, in communities where gypsy moth populations build.

With this idea in mind we held the first annual AIPM defoliation press tour on July 7, 1989. Our goal was to attract reporters from areas within the AIPM project that have not yet experienced defoliating gypsy moth populations and take them to areas where severe defoliation was in progress.

The gypsy moth was very cooperative in providing a heavy infestation in nearby Garrett County, Maryland and in Somerset and Fayette Counties, Pennsylvania. In addition to vast defoliation, the reporters were able to observe immense populations of late instar larvae which were just beginning to pupate. All of the "action" was close to the road making for easy observation. Of greatest interest to the press



folks were several stops at rural homes, at which residents were able to relate, first hand, how they felt about defoliation and larval presence on their property.

Although the press turnout was light this year, we will hold another tour next year. We will make a greater effort to publicize it to the media and emphasize the media's responsibility to inform readers, listeners, and viewers of what could be in store, if and when the gypsy moth infests their community.

Demonstration Project News readers can help by encouraging local members of the press to attend. The



This larva obliged us by feeding upside down on a hemlock. All of the hardwoods in the area were totally defoliated.

tour(s) will be held the week of July 4 and we may conduct one in each state. More details will be forthcoming in future Demonstration Project News issues.

Terry Frey

¹Appalachian Integrated Pest Management (AIPM) Gypsy Moth Demonstration Project, Final Environmental Impact Statement P. I-9

AIPM AIDS IN TRIAL . . . continued from page 4

The objectives of the project were:

- 1) To begin to establish swath widths for various aircraft equipped with different types of nozzles or atomizers (flat fan, micronair, hollow cone, Beechomist) and different sized nozzle tips (e.g. 8003, 8004); and 2) To deter-



Helicopter with spray boom longer than rotor width makes a spray pass. One objective was to evaluate effective swath width when boom length exceeds 75% of rotor width.

mine if there is a difference in the effective swath width between boom lengths with nozzles that exceed 75 percent of the rotor-diameter and those that do not exceed this percentage.

Each aircraft made spray runs over two movable Kromekote card lines spaced 50 feet apart with 91 spray card stands 4.92 feet apart on each line.



JON BRYANT, developer of the Swath Kit takes weather characterization readings. For more information about the Swath Kit review Demonstration Project News Volume 1, Issue 5, September 1988 and Volume 2, Issue 3, March 1989.

Droplet characteristics (e.g. drops per square centimeter and volume median diameter) and spray pattern were assessed utilizing the Swath Kit. A variety of aircraft were characterized. Amy & John operated the Swath Kit.

TERRY FREY & RICHARD REARDON